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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/788,547	02/21/2001	Yoshikazu Ichiyama	010133	5622

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EXAMINER

LAM, THANH

ART UNIT PAPER NUMBER

2834

DATE MAILED: 03/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
**09/788,547**

Applicant(s)  
**Ichiyama**

Examiner  
**Thanh Lam**

Art Unit  
**2834**



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☒ All b) ☐ Some\* c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 23
- 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

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## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 3 recites the limitation "a magnetization-varying portion" in line 4. There is insufficient antecedent basis for this limitation in the claim.

### *Claim Rejections - 35 USC § 103*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Joeng in view of Hoffman.

Regarding claims 1 and 6, Jeong discloses a fluid bearing motor provided with a bearing assembly, the bearing assembly comprising: a shaft (40); a substantially solid porous sleeve (70) faced to the shaft with a bearing portion with a minimum gap provided therebetween. However, Jeong does not show that the shaft formed partly or wholly of a ferromagnetic substance; and the fluid bearing is magnetic fluid oil impregnated into the gap and a porous sleeve including a ferromagnetic material; and, wherein a ferromagnetic substance included in the shaft is locally magnetized to create magnetic flux density gradient that is set at a maximum on the bearing surface of the porous sleeve and decreases gradually as it stays away therefrom.

Hoffman discloses a shaft (12, fig. 3) formed partly or wholly of a ferromagnetic substance; and magnetic fluid oil (14) impregnated into the gap and the porous sleeve (10); and, wherein a ferromagnetic substance included in the shaft is locally magnetized to create magnetic flux density gradient (24) that is set at a maximum on the bearing surface of the porous sleeve (18) and decreases gradually as it stays away therefrom (the flux density 24 decreases gradually as it moves downwardly along the surface of the sleeve).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify and replace the bearing assembly of Jeong by the magnetic fluid bearing as taught by Hoffman, such that the replacement of the bearing would provide an ease to assembly.

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Regarding 2, it is noted that in combination of Jeong and Hoffman disclose a boundary of a magnetization-varying portion (at the step portion of the shaft 12) of the shaft is aligned with a line of a flow of the magnetic fluid oil occurring with rotary motion of the sleeve or the shaft.

Regarding 3, it is noted that in combination of Jeong and Hoffman disclose the bearing portion has a groove (71) for generating dynamic pressure formed on a surface of the shaft (40), and a magnetization-varying portion is arranged in a position of the shaft that corresponds to the groove.

Regarding claim 4, it is noted that in combination of Jeong and Hoffman disclose the magnetic fluid bearing motor as claimed in claim 3, wherein the groove is realized as a herringbone groove (71), and the magnetization-varying portion of the shaft is arranged in a vicinity of both ends of the herringbone groove.

Regarding claim 5, it is noted that in combination of Jeong and Hoffman disclose the groove is realized as a spiral groove, and the magnetization-varying portion of the shaft is arranged in a vicinity of an oil admission end of the spiral groove.

Regarding claim 7, it is noted that in combination of Jeong and Hoffman disclose a boundary of a magnetization-varying portion remaining on the surface of the bearing portion of the sleeve is aligned with a line of a flow of the magnetic fluid oil that occurs with rotary motion of the sleeve or the shaft.

Regarding claim 8, it is noted that in combination of Jeong and Hoffman disclose the bearing portion has a groove for generating dynamic pressure formed on the surface of the shaft

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or the sleeve, and a magnetization-varying portion is arranged in a position of the surface of the bearing portion of the sleeve that corresponds to the groove.

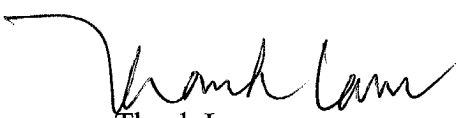
Regarding claim 9, it is noted that in combination of Jeong and Hoffman disclose the groove is realized as a herringbone groove, and the magnetization-varying portion of the surface of the bearing portion of the sleeve is arranged in a vicinity of both ends of the herringbone groove.

Regarding claim 10, it is noted that in combination of Jeong and Hoffman disclose the groove is realized as a spiral groove, and the magnetization-varying portion of the surface of the bearing portion of the sleeve is arranged in a vicinity of an oil admission end of the spiral groove.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Lam whose telephone number is (703) 308-7626. The fax phone number for this Group is (703) 305-3431.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0656.



Thanh Lam

Patent Examiner

March 13, 2002